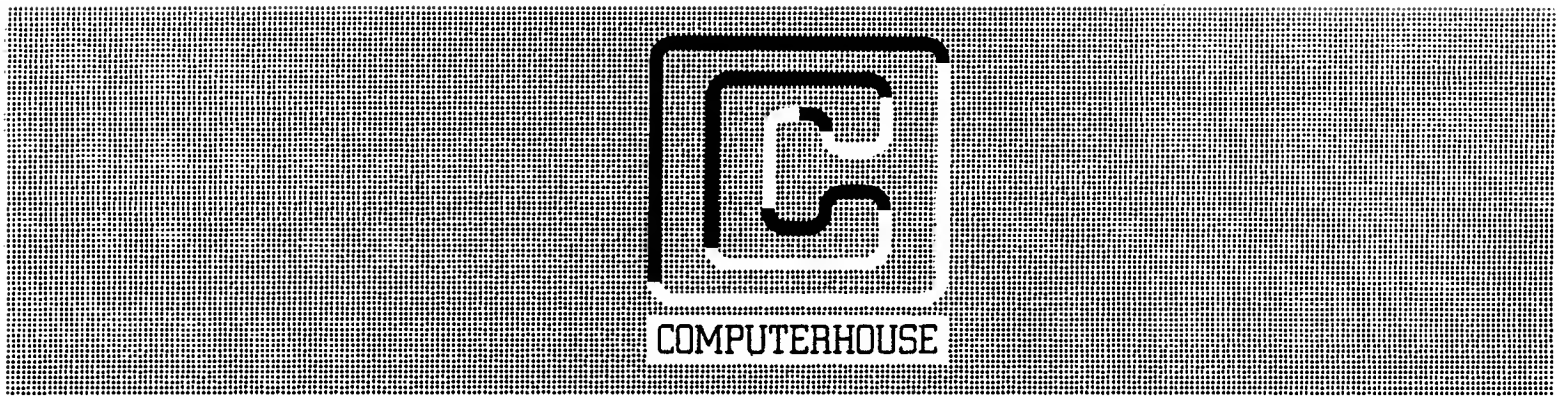
COMPUTERHOUSE

Notes on The SUPER ARCHIVER! 3.x2UK

The following is the changes/additions that have been made to the original Archiver/Editor 1.0 program. Users should familiarize themselves with the original Archiver/Editor documentation before reading these notes. Each item will be listed in a specific sequence: 1. The capabilities of the old hardware/software combination, 2. The capabilities of the old hardware with the new Super Archiver software, and 3. The capabilities of the new Super Archiver hardware for the 1050 and the new software.

I. Improvements.

A. Number of sectors/track.

1. Will copy 25 sectors on a track, but the custom Formatter and Mapper only support 24.

2. Will copy, and format up to 28 sectors/track, and map up to 31.

3. Will copy up to 35, format up to 40, and map up to 42 sectors/track.

B. Writing more than 19 full sectors on a track.

1. This can only be done by slowing the drive speed to around 270 RPM, but have no indication of when this was necessary, and involved much guesswork.

2. When this particular track is encountered, a message will appear telling you to slow down the drive. The program will wait for you, and let you know when to return to normal speed.

3. The program will automatically slow the drive speed via software, so no switching or effort is involved.

C. Short sector support.

(Definition: A short sector is one that does not contain 128 data bytes. It may have anywhere from 1 to 127 bytes, and will almost always reflect a CRC error. These types of sectors are used to fit more than 22 sectors on one track.)

1. In order to copy a track with short sectors, you needed to custom format a track, and play with the editor. You could not mix short sectors with CRC sectors at the same time.

2. Short sectors are directly supported, and may be mixed with CRC sectors. They are very simple to make: Position the cursor on the sector you wish. Then type [B] until a lower case s appears under the sector. Then edit the last byte of that sector. (If it has no data, use the [INSERT] key to create data.) The last byte will be the sector length. Two short sectors of 64 ($40 hex) bytes in length will occupy approximately the same amount of space as a standard good sector. When filling the short sectors with data, it is best to make the sector 2-3 bytes longer than the data for that sector. This is because of "write splicing", or when the drive is instructed to stop writing the sector.

3. Same as above. (#2)

D. Extra memory support.

1. Only supported the 48K of normal RAM memory.

2. Supports the extra memory in the 800 AXLON upgrade, 130XE, and 130XE compatible XL upgrades. No more 3 pass copying! (This is very handy when editing a disk: Most all of the disk may be read in, edited, then written out!) Please note that because of the length of the Archiver/Editor 3.0 program, a very full disk may require a second short pass.

INSTALLATION GUIDE
FOR THE
1050 SUPER ARCHIVER

First turn the drive upside down and remove the 6 screws, now turn it the right way up again and remove the top cover, you will now be face to face with the drive mechanism, the drive mechanism is held in place by 4 posts, lift it up gently off the posts and then let it lean to the back of the drive by turning it upside down thus enabling you to have a clear view of the circuit board underneath (see fig.1).
Note: If there is a metal shield you will have to remove this too.

Now remove the operating system chip U10,(see fig.1),this chip will no longer be require. Now plug in the Super Archiver chip module making sure that the 4 wires coming out of the module are nearest the front of the drive and is sitting in the socket correctly. Next pry the 40 pin WD2793 CHIP from its socket and then bend leg 31 up gently , reseat the WD2793 CHIP back into its socket making sure that leg 31 is now outside of the socket.
Now pry the 40 pin 6532 CHIP out of its socket and bend up leg 23 and then re-seat the 6532 CHIP back in its socket, yet again making sure that leg 23 is now outside the socket.

Got your soldering iron ready?
Firstly add a spot of solder on chip legs 31 and 2 on the WD2793 chip then do the same to the chip legs 23 and 10 on the 6532 chip, next add a spot of solder to chip leg 10 on the 14 pin chip 2917, (this is located next to the Atari speed pot(see fig.1) and finally put a spot of solder on the post marked TP11, (located near the WD2793)

The next step is to connect the 4 coloured wires to their appropriate points:
RED WIRE is soldered to leg 31 of the WD2793 chip.
GREEN WIRE is soldered to leg 2 of the WD2793 chip
YELLOW wire is soldered to leg 10 of the 6532 chip
BLACK WIRE is soldered to the post TP11.

Finally take the Super Archiver Speed pot and solder the end with the diode to leg 23 of the 6532 chip ,the other end to leg 10 of the 2917 chip and then stick the speed pot to the alloy chassis (see fig.1).

Re-assemble the drive except for the top cover and then connect the drive to the computer.
Boot up the Super Archiver software disk,(no need to hold down OPTION), when then menu comes up choose the Super Archiver Diagnostics.

NOTE:IF THE DRIVE DOESN'T REACT THEN READ THE PARAGRAPH 'CHECK THE JUMPERS:'

When the Diagnostic has loaded in you will be asked what drive you are testing, press 1 if the Archiver Drive is drive 1, you will now be presented with the main diagnostic menu, choose the option to test your drives speed.

Insert a formatted disk and press return, your drive speed should be 288RPM, if not adjust the Atari speed pot with a small screwdriver till you get the correct reading, now press START, your speed reading should be 270RPM, if not adjust the Archiver speed pot till you get the correct reading. Now its time to put the top cover of the drive back on...done?

THAT'S IT, YOU'VE FINISHED!!!

Should you have problems check your installation thoroughly, if you can't find the fault you can contact us at:

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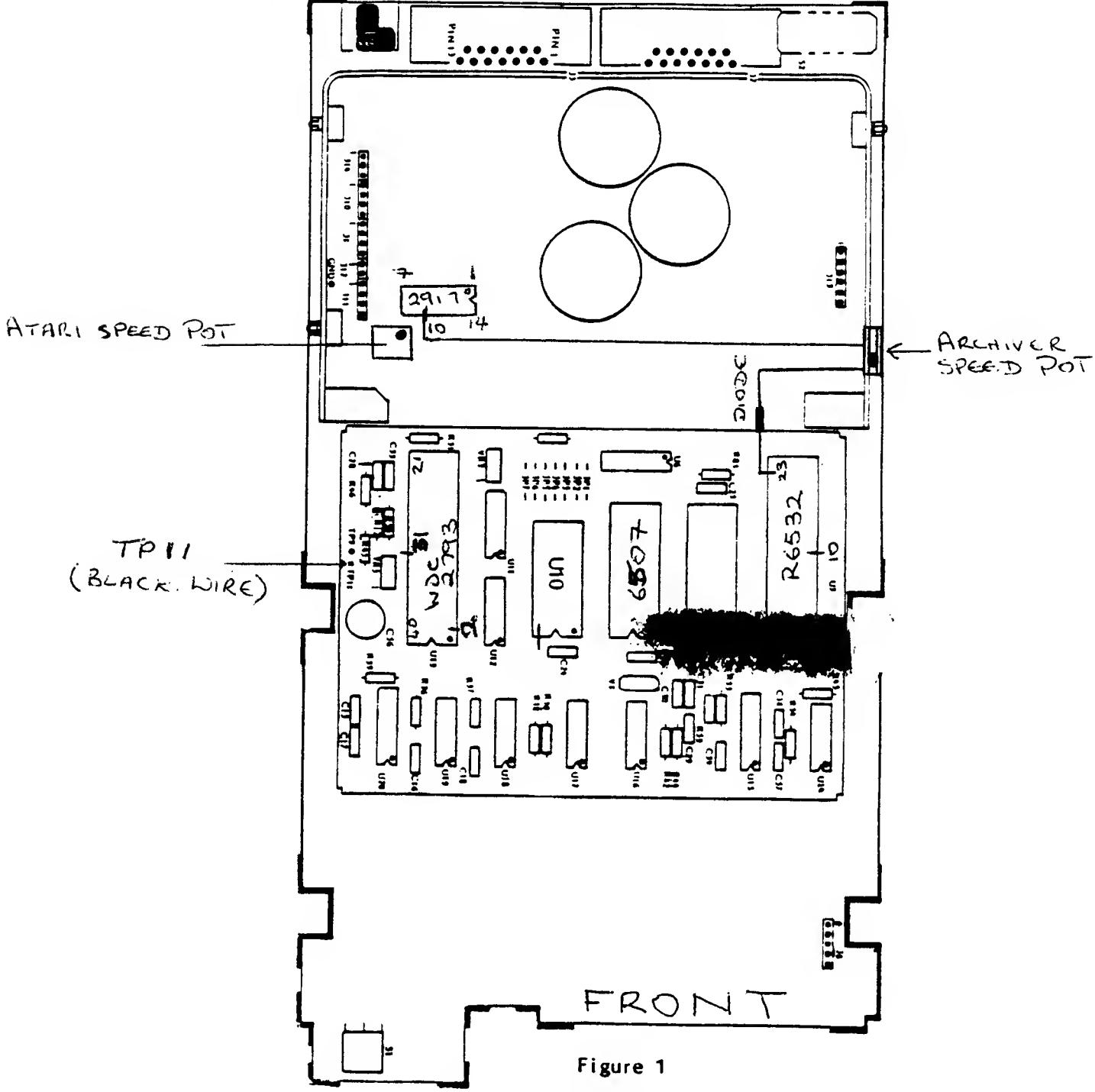

Figure 1

1050 P C B Layout

Check the jumpers:

JP1 through JP7 are the jumper wires behind U10. These jumpers might be solid pieces of wire soldered between two pads or a wire with a white ceramic covering around the center. Both types serve the same purpose. JP1 and JP3 should be open (no connection) and JP2 and JP4 should be closed (jumpered). Most drives we have seen so far have the jumpers in the correct locations. If necessary, use your soldering iron and move the jumpers or cut the jumpers with side cutters and solder new wire across JP2 and JP4. The other jumpers JP5 through JP7 should remain as is.

3. Same as above. (#2)

E. Track mapping. (Read Format)

1. Supported 4 types of track mapping, each being necessary to copy certain programs. Maximum sectors that could be mapped was 24.

2. Has a single A6+ mode (the most reliable) track map routine, capable of mapping 31 sectors.

3. Has a single A6+ mode (the most reliable) track map routine, capable of mapping 42 sectors.

F. Extended Formatter/Mapper sections.

1. Supported mapping and formatting a maximum of 24 sectors.

2. Has a two page formatter and mapper, capable of formatting up to 28 sectors, and mapping up to 31 sectors/track. (Use the up or down arrow keys to flip between pages.) The Formatter's default sector layout is the fastest possible format. The mapper has one small modification: The seldom used status byte has been replaced with the "mark" or side byte. This number is normally not used, but on certain disks will reflect the sector order. The sector with the mark byte of 0 is the first sector was the first sector written on that track.

3. Same as above (#2), except capable of formatting up to 40 sectors, and mapping up to 42 sectors.

G. Fuzzy sector support.

(Definition: A "Fuzzy" or "Phantom" sector is a sector in which the data does not remain constant. It will almost always carry with it a CRC error, because of the unstable data.)

1. Had no support for fuzzy or phantom sectors.

2. If enabled, will show you where a fuzzy sector is located, and how much data is unstable. (The last two bytes of the sector denote the starting and ending bytes of the fuzzy data.) You can not write the fuzzy sector, unless you have special hardware. Computehouse sells a product called "The Electronic Phantom Sector Maker" (You may contact them at: (01) 731-1276). To enable the phantom sector check, set the P parameter on the top status line to a +.

3. Directly supports the copying and creating of fuzzy sectors. In fact, it will duplicate the constant part of the data exactly! Remember to enable the phantom sector check on a disk you suspect contains a fuzzy sector. (The reason it defaults to off is because each CRC error sector is read four times, and this slows down the copying of the disk.) When creating a fuzzy sector, you specify the bytes to begin and end the "fuzzing" of the sector in the last two bytes. You may also cause your fuzzy sector to have a deleted data mark error as well, thus increasing the difficulty of duplicating it. (except with the Super Archiver!) Change the error status of the sector by typing [B] until a lower case p, or a d for deleted data mark fuzzy sector appear under the sector.

H. Inserting custom formats.

1. Typing an [I] in the editor would take the sector order from the formatter section and place it in each track specified by the R: range.

2. Typing an [I] inserts the sector order from the formatter ONLY on the current track shown. So you won't wipe out all your data if you forgot to reset the R: range.

3. Same as above. (#2)

H. Hex/Decimal numeric display & entry.

1. Displayed everything in Hexadecimal format.

2. The default display is in hex, but changing the S parameter on the top status line will display all sector numbers in the Archiver, Editor, and Formatter in decimal. Any 16 bit number will still be displayed in hex, as well as data in the Formatter section. If when in decimal, the number exceeds 99, a 99 will be displayed.

3. Same as above. (#2)

I. Format length correction/error trapping.

1. Format length in the Formatter needed to be in the range of $0BC0-$0CB0. If track was too large, a format error would be displayed after it tried 4 times to do it.

2. Format length should be between $0600 and $0D9F. The track will be automatically lengthened if it is too short, and the "Please slow drive speed" message will be displayed if the track is a little too big for normal speed. If it is too large for even slow speed, it will give you the error "Track too large".

3. Same as above (#2), except drive speed will automatically be adjusted via software.

J. Editor memory overflow.

1. While reading a track, the partial track would be stored if the memory overflowed, thus causing the possibility of missing sectors if you did not catch it.

2. The partial track is deleted, so you will never write a sector that was not read.

3. Same as above (#2).

K. Dumping sector data to printer.

1. On some printers, printing a backspace character will cause problems, and garble the print.

2. The backspace character is "filtered", so no problems should occur.

3. Same as above (#2).

L. Disassembler address/format length (in the Editor only).

1. Displayed the disassembler's start address on the status line, but did not display the current track's format length.

2. Displays the track being written's format length in place of the disassembler address (a seldom-used feature). The address may still be changed with the [L] command.

3. Same as above (#2).

M. Double sector problem.

1. In a track with many double sectors with all one byte, the data in a few of the sectors would not be accurate.

2. Double sectors are not compacted, so no error will occur.

3. Same as above (#2).

N. Verify default.

1. Defaulted to verify on, which slowed the writing considerably.

2. Defaults to verify off, for speed. The drives are usually very reliable, and need no verification. But if you are not sure of the quality of the disk, the verify may be turned on.

3. Same as above (#2).

O. Opening of the Archiver hardware.

1. Requires an opening code to be entered (the safest way of doing it), or the drive turned on while the archiver disk is inserted (Which almost always causes bad sectors on the last track).

2. Requires the Archiver to be open to fully load the program disk. If it is not, you will be prompted for the opening code.

3. The Super Archiver software will automatically open up the Super Archiver 1050 enhancement while booting.

P. "Double-Density" or "Long" sectors.

1. Would not recognize double-density sectors, and hence would not produce a workable copy.

2. Will recognize and duplicate the DD sector, only if the data in that sector is one repeated byte. (Note: an upper-case D is displayed under the DD sector. See below on how to create this type of sector.)

3. Will recognize and duplicate any type of long sector.

Q. RESET trapping.

1. Pressing [RESET] would clear all of memory.

2. Pressing [RESET] will clear memory, but if [OPTION] is held down, it will retain the data. (This is a way to break out of a disk error incase it keeps retrying...)

3. Same as above (#2).

[The rest of this section pertains only to SUPER ARCHIVER 1050 owners]

R. Skewing tolerance.

1. The old software version 1.2 supported VERY crude skewing, which copied little more.

2. Skewing not available for the 810 drive at this time.

3. The new version 3.0 supports a more exact skew, and is user-adjustable, so you can create your own skewed disks. Version 3.1 is not adjustable, but uses an extremely tight skewing program, needed to backup some Electronic Arts programs.

S. Data transfer rate between drive and computer.

1. Supports the standard 19.2K baud.

2. Supports only the default 19.2K baud. The 810 is not capable of Ultra-Speed I/O.

3. Supports Ultra-Speed I/O, which is around 50K baud. If for some reason the high speed causes timeouts, you may disable it by holding [SELECT] and [OPTION] down at the same time while copying. (Note: due to a bug in the 1050 Happy Archiver emulator, ultraspeed on any drive is impossible; so pressing [SELECT] and [OPTION] at the same time is needed to disable the UltraSpeed when reading or writing to your Super Archiver 1050 drive.)

II. Changes in Messages & Symbols.

A. New/different Error messages

1. TOO MANY SECTORS

When reading, this message will appear when reading a track with over 36 sectors, or if a track contains over 31 sectors (on 810 only).

When writing, this message indicates the track contains more than 28 sectors, or 35 sectors if using the Super Archiver 1050 enhancement. This is the current limitation of the 810 chip.

2. LOGIC READ/WRITE ERROR

This error is the same as the "Read/Write error (POS)" in the old Archiver. It occurs when logic seeking commands are used to write a double sector, and there is a missing sector on the track. Caused most often by a format that is too large, or a varying drive speed.

3. ERROR IN READING FORMAT

Same as the "Read/Format error" in the old Archiver. Caused by reading a track with random data, or a track with more sectors than the archiver hardware can support. The 810 is limited to 31 sectors, the 1050 Super Archiver to 42.

4. TRACK TOO LARGE

In the Formatter, this message is displayed if the format length is $0DA0 or greater. In the Archiver/Editor, this error is caused by too many full sectors on a track. Try making some CRC sectors short sectors.

5. INVALID SHORT SECTOR LENGTH

An incorrect value is in the last byte of the short sector being written. A short sector may be from 1-127 decimal, or $01-$7F hex bytes long.

[The rest of the error messages do not apply to 810 owners]

6. INVALID FUZZ BYTES IN SECTOR

The last two bytes in a fuzzy sector determine which bytes will be fuzzed. The first of the two bytes should be between 0 and 126 ($00-$7E hex), and the last byte should be between 1 and 127 ($00-$7F). Also, the second byte should be greater then the first. If any of the above conditions do not exist, this error message will be displayed.

7. SKEW SEQUENCE ERROR

The sector order that was used in the previous track read does not coincide with the one being read. This error

occurs when the drive's head stepped to a wrong track. This should rarely occur, and if it does, simply retry the operation.

B. Bad sector symbols

1. = Deleted Data Mark sector (right angle)
2. s = Short sector (lower-case s)
3. D = Double Density sector (upper-case D)
4. ! = CRC Error sector (vertical line)
5. = Deleted Data Mark + CRC Error sector (sideways T)
6. p = Phantom sector (lower-case p)
7. d = Deleted Data Mark + Phantom sector (lower-case d)

IV. Using your Super Archiver 1050 with the new Super Archiver software

A. Creating 26 sector tracks.

This form of protection is used quite often to keep back-up devices such as the "Happy" from copying your disk. It is relatively easy to create a 26 sector track, providing you are used to using the Formatter section of the Archiver. Unfortunately, 26 full 128-byte sectors will not fit on one track; so we must use short sectors. For this example, we will use 18 full sectors, and 8 short sectors. Now we must also take into account that the standard Atari drive will only read sectors numbered 1-18 on a track. Since we have more than 18 sectors, we need to use the same sector number twice. This is called a double sector. For double sectors to be practical, they should be full sectors, and not short. The layout below best fulfills these limitations:

Sector:	Length:	Sample Fill:	Type:
$01	$08	$10	short
$03	$08	$11	short
$05	$08	$12	short
$07	$08	$13	short
$09	$80	$14	full single
$0B	$80	$15	full double (#1)
$0C	$80	$16	full double (#1)
$0D	$80	$17	full double (#1)
$0E	$80	$18	full double (#1)
$0F	$80	$19	full double (#1)
$10	$80	$1A	full double (#1)
$11	$80	$1B	full double (#1)
$12	$80	$1C	full double (#1)
$02	$08	$1D	short
$04	$08	$1E	short
$06	$08	$1F	short
$08	$08	$20	short
$0A	$80	$21	full single
$0B	$80	$22	full double (#2)
$0C	$80	$23	full double (#2)
$0D	$80	$24	full double (#2)
$0E	$80	$25	full double (#2)
$0F	$80	$26	full double (#2)
$10	$80	$27	full double (#2)
$11	$80	$28	full double (#2)
$12	$80	$29	full double (#2)

Enter the sector order, length, and fill byte from the above table into the formatter. You may incorporate program data into each sector, but that is beyond the scope of this example. Your program should read this track in the following order, check for these statuses, and compare the first byte of the sector with the byte shown:

Sector:	SIO Error status:	First byte:
$01	$90 (CRC error)	$10
$02	$90	$1D
$03	$90	$11
$04	$90	$1E
$05	$90	$12
$06	$90	$1F
$07	$90	$13
$08	$90	$20
$09	$01	$14
$0A	$01	$21
$0B	$01	$15
$0B	$01	$22
$0C	$01	$16
$0C	$01	$23
$0D	$01	$17
$0D	$01	$24
$0E	$01	$18
$0E	$01	$25
$0F	$01	$19
$0F	$01	$26
$10	$01	$1A
$10	$01	$27
$11	$01	$1B
$11	$01	$28
$12	$01	$1C
$12	$01	$29

An example of this type of track is Track #30 ($1E) on your Super Archiver master disk. (To see the fill bytes, read the track with the Compaction set to - or off.) You may use the move feature of the archiver to place this track onto track 39 ($27) of a sample disk. To do this, set the Range parameter to 1E,1E (30,30 if you are in decimal mode). Enter the Editor, and [R]ead this track. then type [N], 27 (or 39 if you are in decimal mode) to renumber the track to #39. Now reset the Range parameter to 27,27 (39,39 if you are in decimal), insert your test destination disk, and [W]rite the track out!

B. Creating short sectors.

Go in to the editor mode, set the range parameters, and read in the desired track(s). Then move the cursor to the desired sector to be short. Note the sector must have data in it. If it does not, press the Insert key. This will insert probably junk data, but that's all right for now. Now press [B] till you see a lower case "s" under the sector. Now type [E] to edit the sector, and place the cursor at the last byte (bottom right corner). Type the length of the sector in HEX, and press [ESC] to exit. Now insert your destination disk, and press [W] to write it out.

C. Creating fuzzy sectors

This is most easily done with the "Fuzzy Sector Maker" program on the program disk, but can also be done with the Editor. Follow the same procedure as in creating short sectors, with the exception of exiting the last byte. Type the [B] key till you get a lower case "p" under the sector number. Now edit the last two bytes of the sector. The first byte is how many bytes to keep stable, and the last byte is "fuzz until you get to this byte".. For most purposes, the last byte should be 7F, to fuzz the rest of the sector. But interesting results may be had by fuzzing only 2-3 bytes in a sector. For example, to fuzz bytes $50-$5F, you would put 50 5F as the last two bytes in the sector. Remember the first byte must be between 00 and 7E, and

the last byte between 01 and 7F. The last byte should also be greater than the first.

D. Creating your own skewed disks.

Skewing is the measurement of time between two different tracks. For example, if sector 1 on track 0 is located 180 degrees away from sector 1 on track 1, a program could read each sector 1, time it, and compare it to a given value. This form of protection is used, and is quite effective against sector copiers, but not some enhancements (such as the Super Archiver 1050!). Normally what is done is to line up the first sector of each track (assuming all tracks in the skew section are the same format). The software will read that first sector of each track in a certain order, and compare it with a certain timing. For example, the same time it takes to read sector 1 on track 0 twice should be the same time it takes to read sector 1 on track 0, and sector 1 on track 1. When stepping more than 2 tracks, allowances need to be made for step rates, because certain drives step slower than others. Usually measuring the time between one track the the very next one is effective enough. The way to create this type of precise format is to read in a formatted disk with the skew parameter (SK- on the top status line) turned on (to a +). Then with the editor, position the cursor so the second track is displayed, and type [S]. (The first track has no reference, so it does not need a skew value.) Then type "658". This is an approximate value which will cause the first sector of each track to be lined up. (To line it up exactly, the index hole would need to be used. Unfortunately, the 1050 drive does not have an index hole sensor, so timing values need to be used.) Repeat this step for however many tracks you desire to have lined up. (Only 2-3 are really necessary for the skew check.) After all the tracks desired have been modified, insert a destination disk and [W]rite it out. To make copies of that skewed disk, the 3.1 Archiver is recommended. This is because it duplicates the skew very precisely. The reason that type of skew was not incorporated into the editor is because it is not practical to edit the skew. The skew in the editor is good enough for most all programs, but the 3.1 version is needed for some Electronic Arts programs.

E. Creating Double-density sectors.

A "Double-density" sector is one in which the length byte in the sector header tells the floppy disk controller the sector is 256 bytes long. However, there are only 128 data bytes that may be read from this type of sector, since you are really still in single density. This sector is unusual in that it looks like a CRC error sector, but more status bits are cleared in the drive's status register than a standard CRC sector. (Indeed, a double-density sector does have a CRC error, but it also will show the "lost data" bit set because of its length byte.) To create this type of sector, enter the Editor, and read the desired track. Now position the cursor on the sector you wish to make long, and type the [B] key till an upper-case D appears under it. (There must be data in the sector, so if there is none, press [INSERT].) Now write out the track! Special note to 810 owners: The floppy disk controller in the 810 is only capable of writing an entire double-density sector at format time; if you wish to place your own data in the sector, only the first 16 bytes will actually be written. When copying, the 810 will write the full sector only if the sector has one fill byte (if each byte is $1A, for example). Otherwise, it will only get the first 16 bytes.

V. Notes on version 3.1

A. Why another version?

The 3.1 version of the Super Archiver software has about 98% of the copying power of 3.0, but with a few differences in operation.

1. The Editor, Mapper, and Formatter have been removed. Its only purpose is to copy. It does not use any extra memory. This was done incase you have a computer upgraded with an extra memory device that is not compatible with the Super Archiver. If you experience problems that you believe are related to your extra memory, then you can use this program.

2. If you turn the Skew parameter on, the skew is measured in a more exact way than the editor. This is needed for some programs.

3. There are less commands, therefore less confusing. All you need to set is source drive, destination drive, number of copies, and skew parameter. (This should be off if you are using an 810.)

4. The maximum sectors per track on this program is 28.

5. Double-density sectors are handled differently, copying things that might give the 3.0 Editor a problem.

If version 3.0 of the Archiver does not produce a working copy of your disk, try this version.

IV. Conclusion

The power of the Archiver definitely has been increased by this new product. It is especially nice to be able to load a whole disk into memory, edit it, and write it all back out. Enjoy the new features!

THE ARCHIVER TRACER

The 810 Chip was designed to support tracing the loading of a disk, yet the promised Archiver 2.0 was never released. So, the Archiver Tracer program has been developed.

A. Why a tracer?

A tracer program is very helpful to find out just what a program is doing. Also when debugging a protection routine, or just playing with it, it is very handy. Also it can be used to determine if certain "uncopyable" tracks are needed to be copied. For example, some software houses will put garbage tracks on a disk that will cause the copying program to error out. However, the program may now even look for data in these tracks! So you can use the results of a track trace after booting the program to be copied, and just copy the tracks that were read.

B. Types of tracing.

The 810 and Super Archiver 1050 support two types of tracing: Track and Sector tracing. Track tracing will show how many times each of the 40 tracks were accessed. Sector tracing will display sector numbers that were read (helpful in identifying double sectors). With sector tracing, only 36 sectors may be traced (In the Super Archiver 1050, the limit is 62). To work around this limitation, an offset may be specified. For example, to trace the 40th thru 50th sectors read, you would enable a sector trace with an offset of 38. (Note that all numbers in the tracer are in decimal.) Then boot the program to be traced. After it is booted, re-boot the tracer, and get the results of the trace. The program will ask you which type of trace you selected. Type [2] for sector trace. The third thru 13th entries will be the 40th thru 50th sectors read (add the offset into the offset on the screen). Since the Super Archiver 1050 supports 62 sectors, there may be another page of data. You may get the first page again by typing [4] to get the trace again.

C. Making a hard copy.

You may dump the screen to the printer at any time by typing P (you may use Control-P also). Remember to do this to both screens of a sector trace that extends to two screens.

D. Errors.

The Archiver must be opened when getting the trace. If the program to be traced requires the Archiver to be closed, first enable the trace, then type [1] to open the archiver, entering an invalid opening code. Do NOT turn off the drive at any time! This will abort the trace. after tracing the program, reboot the Super Archiver program disk. It will ask you for the opening code if you are using an 810. It will then proceed, and you may analyze the trace.

The SUPER ARCHIVER 1050 Diagnostic

The diagnostic program allows you to not only test the operations of your enhancement, but also adjust the drive speed, and change drive numbers! Remember all sections of the diagnostic will only work on Super Archiver 1050 drives.

A. Using the RPM adjust section.

The Program will prompt you to insert a formatted disk. It will display the drive's speed in RPMs with an accuracy of

+/- 1 RPM. It is updated more than once a second, so adjustments may be made quickly. See the installation manual concerning speed adjustment. You may adjust the slow speed adjustment in your enhancement by pressing [START] while it is displaying the RPM. The normal speed should be 288, and the slow speed should be 270-271.

B. Using the Diagnostic.

Before performing the diagnostic, you should turn your drive off, wait 1/2 seconds, the turn it on. This will clear out any programming the archiver programs do to the drive's RAM memory. If you are having problems with the drive acting very strange, it might be a good idea to run option [C] the continuous diagnostic for a few hours to see if anything fails. Any failure of the diagnostic does not necessarily mean the Super Archiver enhancement is at fault. Call Computerhouse at (01) 731-1276 for information on repair.

C. Changing the drive numbers.

Normally, the two switches on the back of your drive allow it to be operated as drive 1 thru 4 on your system. If you wanted to change drive numbers, these switches had to be set. This part of the diagnostic allows you to change the drive number for a particular switch setting via software, so no switches need to be set. Remember that changing the number is not permanent; it will return to the default if you interrupt the power. If your drive is set for #1, and you need to use it as drive 2 temporarily, you can use the diagnostic to change switch setting #1 to respond as drive 2. Also, this may be implemented to use up to 9 drives at once, since the drive number you select may be from 1-9. (Yes, 9 drives! Currently the only DOS we know of to support the 9th drive is MYDOS by WORDMARK.) Press [ESC] at any time to abort the current function.

The SUPER ARCHIVER 1050 FUZZY SECTOR MAKER

This program is designed to easily create and/or duplicate a fuzzy sector. It does basically the same as what can be done in the Archiver Editor 3.0, but with more simplicity. Remember this program may only be run an a Super Archiver 1050 drive.

Since most of the material concerning fuzzy sectors has been previously covered, only the main functions will be presented.

Use [R] to read the sector. The sector data will be displayed, along with the sector status. If the sector is fuzzed, the byte at which the fuzzy data begins will be displayed. To verify this, type [B] to view the 4 buffers. To write out this exact fuzzy sector, insert your destination disk and hit [W]. There are two ways to make a good sector fuzzy. You may use the [G]eneral fuzz, which makes the last two-thirds of the sector fuzzy, or you may use the [S]pecific fuzz. This prompts you to enter the starting and ending fuzz bytes. Interesting results may be had by only fuzzing 1 to 3 bytes! The [A] function is used to read the same sector in again (saves having to type the sector number again).

It is a good idea to turn the drive off, wait 1/2 second, then turn it back on after using the Fuzzy sector maker. This is not a necessity, but the Fuzzy sector maker programs the drive not to retry on error sectors. So to insure error-free operation, this is suggested.

The SUPER ARCHIVER 1050 Enhancement

These are some brief notes on your Super Archiver 1050 enhancement.

The enhancement will enable your 1050 drive to read, write, and format in single, enhanced, and true double density. All reconfiguring commands associated with density switching are supported. To use the double density feature, use a double density

DOS. (There are many good DOS programs available, including the asy-to-use Ultra Menu DOS available from Computerhouse (01)-731-1276.

Your 1050 Super Archiver also has Ultra-speed capabilities, which means faster disk speed with the appropriate software. The only DOS programs to support this feature are SpartaDOS from ICD, and TOPDOS 1.5, although if you have the Controller Card from Computerhouse their Superdump III toolkit software has full Ultra-speed backup support.

The enhancement has been designed so it should not conflict with the loading of any protected software, in fact, there is some software that will not load in a standard 1050, that will load with the enhancement installed. If, however, a program checks to see if an Archiver is installed then there are two modes of of operation that the 1050 Super Archiver can function as:opened and closed. In normal conditions the 1050 Super Archiver will be in the closed mode and will open automatically only when the Archiver software disk is booted up, you can also open the 1050 Super Archiver manually by using the code ABCD, to close the enhancement just turn off the drive and wait for 1 second, then turn the drive back on again.....

WHAT IS A FUZZY OR PHANTOM SECTOR?

A Fuzzy or Phantom sector is one that gives you slightly different data each time it's read. The game program will read this sector several times and compare it to itself each time. As long as the sector is different each time the program will execute and run properly. This type of protection is now being used quite extensively by software houses as it fools drive enhancements such as the Happy/Duplicator drive enhancements into thinking it as copied the protected software correctly, only the Super Archiver is capable of duplicating and even creating his type of protection successfully!!!

Now you've expanded the capabilities of your 1050 drive, how about expanding the capabilities of your Atari XL/XE computer, Computerhouse have another product called the Controller Card Desktop Management System, and is without doubt the most powerful and versatile hardware modification for the 8-bit Atari computer range ever to be released.

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